



EdgeSeries Reel & EdgeMax Bedknife Damage

Product: Reelmaster® Cutting Units

October 16, 2018

Affected Units:

Reelmaster® Fairway Cutting Units

Models:

03606, 03607,
03608, 03609,
03675, 03676,
03677, 03678,
03679, 03170,
03171, 03910,
03820, 03821,
03780, 03781,
03485, 03486,
03487, 03488,
03621, 03623,
03639, 03641,
03188, 03189,
03190, 03721,
03722, 03727

Serial Numbers:

316000101 - 499999999

Situation:

Some customers may experience broken or damaged reels or bedknives on EdgeSeries Reelmaster cutting units. After investigating various failures, we have identified two main symptoms:

- EdgeSeries reel damage to the reel blade(s)
- EdgeMax inserts coming loose

EdgeSeries Reels: Our investigation revealed that Forward Swept Reels (FSR) are more susceptible to damage when contacting foreign objects. Contact will create a condition where the bedknife is forced into the reel while turning, causing damage to the reel blades, weldments and bedknife. The EdgeSeries FSRs have a more aggressive blade angle, which provides better edge retention but also makes it more likely that the reel could catch on the bedknife if there is contact with foreign objects.

EdgeMax Bedknives: Bedknife inserts can become damaged for a variety of reasons as well. The most common reasons are contacting foreign objects (or impacts), excessive bedknife grinding and general wear or worn past the service limit.

Action Required:

Review and understand the content in this bulletin

EdgeSeries Reels:

1. Verify proper reel and bedknife maintenance as outlined in the Operator's Manual
2. A lead-in chamfer is required to help prevent damage to bedknife and/or reel. Refer to the Operator's Manual and Figure 5 for more details.
3. The FSR design is more prone to damage since the reel outside diameter "grows" during impact conditions versus the radial reel design, and thus having a lead-in chamfer is more important. See Figure 3
4. The operator must understand where the reel damage occurred on the golf course (steel drainage grates or yardage marker, sprinkler heads, tree roots, loose bolts, angle of mowing, etc.), and try to reduce the chances for impact. For instance, lower the sprinkler head, cut tree root out, or change approach angle to mitigate contact, etc.
5. Continue both machine maintenance and turf maintenance. Some of the items listed above become exposed over time (erosion, lowering height-of-cut, tree root growth, etc.).

EdgeMax Bedknives:

For EdgeMax bedknife damage, inspect for proper cutting unit maintenance and adjustment. If the bedknife is bent at all, the insert will fracture because the tool steel insert does not bend. Additional considerations:

1. Inspect for signs of impact and address impact conditions as listed above
2. Foreign material such as debris, golf balls, machine hardware, etc. should always be cleared before mowing
3. Ensure proper grind angles are being used. Refer to the grind angle chart on [Bedknives Reference Chart](#)
4. Worn bedknives will eventually weaken the insert joint. Measure the bedknife wear per [Toro | Reel Mower Sharpening Guidelines](#) and [Bedknives Reference Chart See Figure 4](#)



Figure 1

- 1 - Spider yielded
- 2 - End of reel blade is bent
- 3 - Weld is torn

This figure shows typical damage from the leading edge of the reel catching on the bed knife. The spider gets pushed back because the reel stops so quickly.



Figure 2

1 - Typical Bedknife Damage

This figure shows the insert has been pulled out of the knife from the impact with the reel. The bedknife may be bent upward and inward as well.

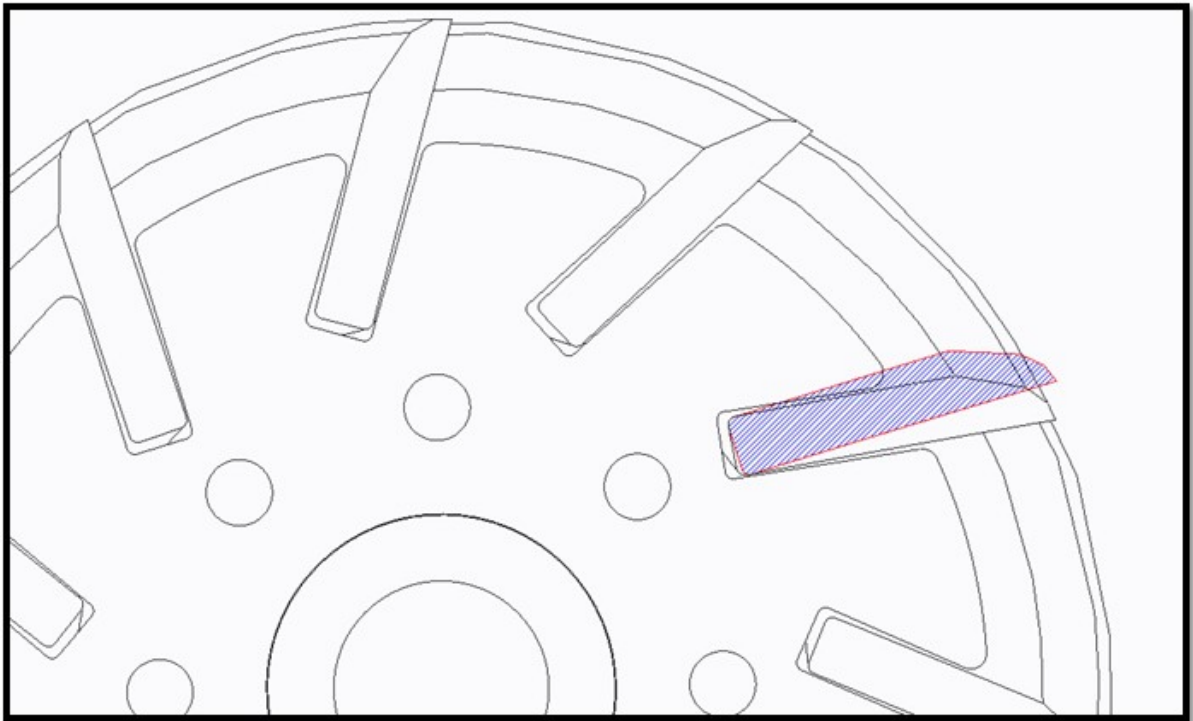


Figure 3

This image shows how the reel grows if a blade is bent back on a forward swept reel

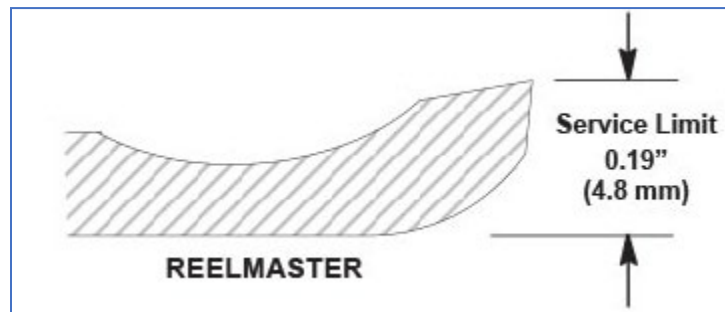


Figure 4

Measuring Bedknife service limit

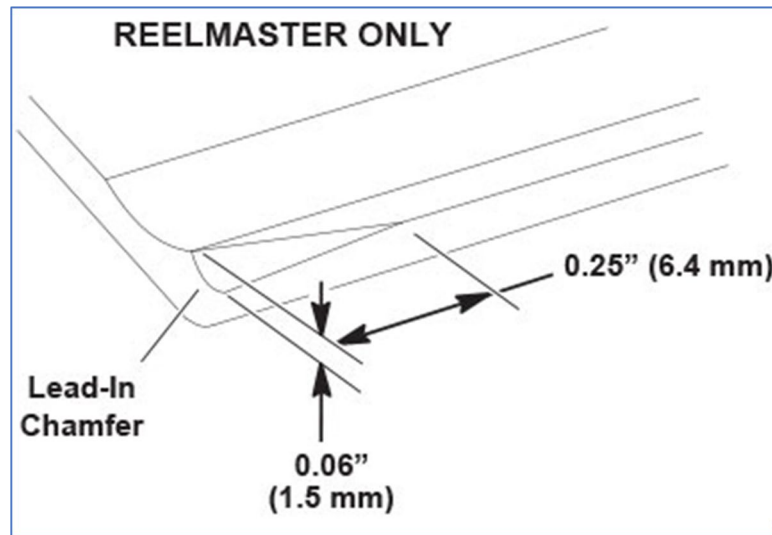


Figure 5

Notice the lead in chamfer on the leading edge of the bedknife. The lead-in chamfer helps to ensure the reel blade is forced over the bedknife even if the knife is deflected up slightly.